



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Tin Forks Sale 341-02-25

District: Tillamook

Date: 7/3/01

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$198,482.88	\$200,026.72	\$398,509.60
		Project Work	(\$129,606.00)
		Advertised Value	\$268,903.60



Timber Sale Appraisal Timber Description Tin Forks Sale 341-02-25

"STEWARDSHIP IN FORESTRY"

District: Tillamook

Location: T2N R8W Sec. 1, 2, and 3.

Date: 7/3/01

Stand Stocking: 20%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	13	0	95
Alder (Red)	12	0	95

Volume by Grade	Douglas - Fir	Alder (Red)	Total
2S	406	0	406
3S	346	0	346
Camprun	0	1,448	1,448
Total	752	1,448	2,200

Comments: Pond Values Used: 2nd Quarter 2001 + Local Pond Values



Timber Sale Appraisal

Logging Costs

Tin Forks

Sale 341-02-25

"STEWARDSHIP IN FORESTRY"

Date: 7/3/01

Operating Seasons: 2.0

Profit & Risk: 15%

Project Costs: \$129,606

Other Costs (P/R): \$5,400

Slash Disposal: \$5,914

Other Costs: \$7,230

Road Maintenance: \$7.36

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	2.0	3.0
Alder (Red)	\$0.00	3.0	2.8

Local Pond Values

Date	Species	Grade	Value
5/1/01	Alder (Red)	Camprun	\$400.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Logging Costs Breakdown Tin Forks Sale 341-02-25

Costs	Douglas - Fir	Alder (Red)
Logging	156.05	156.05
Road Maintenance	7.75	7.75
Fire Protection	2.46	2.46
Hauling	80.84	53.79
Other (P/R appl.)	2.45	2.45
Profit & Risk	37.43	33.38
Slash Disposal	2.69	2.69
Scaling	2.00	0.00
Other	3.29	3.29
Total	294.96	261.86

Amortization	0.00	0.00
Pond Value	558.90	400.00
Stumpage	263.94	138.14
Amortized	0.00	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Tin Forks Sale 341-02-25

Amortized

	Douglas - Fir	Alder (Red)
MBF	0.00	0.00
Value	0.00	0.00
Total	0.00	0.00

Unamortized

	Douglas - Fir	Alder (Red)
MBF	752.00	1,448.00
Value	263.94	138.14
Total	198,482.88	200,026.72

Gross Timber Sale Value

Recovery \$398,509.60

Prepared by: Colleen Holmen

Date: 7/3/01

District: Tillamook

Phone: (503) 842-2545

Additional Costs

Tin Forks



Cable Yarding Volume:	2134	MBF
Ground Yarding Volume:	66	MBF
Total Sale Volume:	2200	MBF

"STEWARDSHIP IN FORESTRY"

ADDITIONAL COSTS - PROFIT & RISK TO BE ADDED						
Yarding & Loading:	Cost / MBF		Volume (MBF)			
Brand & Paint:	\$ 2	x	2200	=	\$4,400	
	Cost / Each		#		\$4,400	
Intermediate Supports (per support)	\$ 100	x	10	=	\$1,000	
					\$1,000	
OTHER COSTS TOTAL					\$5,400	
ADDITIONAL COSTS - PROFIT & RISK INCLUDED						
Non-Project Roads						
Road 1	22	Stations	x	\$ 100	=	\$2,200
Road 2	14	Stations	x	\$ 100	=	\$1,400
					Total	\$3,600
				Yrd ³		\$/Yard
Pit Run Rock	22	Stations	x	33	x	\$ 5.00
					\$3,630	
OTHER COSTS TOTAL					\$ 7,230	

ROAD MAINTENANCE					
	\$/Mile	MMBF	Miles	\$/MBF	
***Grading:	\$500	2.00	10	\$4.55	
	\$/Yd	MMBF	Miles	CuYd	\$/MBF
****Surfacing Crushed:	\$6.00	2.00	10	25	\$1.36
	\$/Sta	Sta	Total	\$/MBF	
*Ditch Clearing and End Hauling	\$20.00	160.00	\$3,200	\$1.45	
TOTAL ROAD MAINTENANCE COST / MBF:					\$7.36

- *Includes cost for excavating, hauling, compaction, and sediment control devices.
- **Assumes that lignin sulfonate is used as dust abatement material.
- ***Assumes grading the road once per MMBF
- ****Assumes 25 cu yds rock per MMBF per mile

PROJECT SUMMARY SHEET

Sale: Tin Forks

CONSTRUCTION

Point	E to F	12 + 65	stations =	\$17,879.00
Point			stations =	\$0.00
Point			stations =	\$0.00
Point			stations =	\$0.00
Point			stations =	\$0.00
SUBTOTAL CONSTRUCTION				\$17,879.00

IMPROVEMENT

Point	A to B	8 + 06	stations =	\$61,377.57
Point	C to D	100 + 88	stations =	\$6,485.83
Point	G to H	70 + 55	stations =	\$2,468.40
Point	A to I	4 + 00	stations =	\$37,538.46
Point			stations =	
SUBTOTAL IMPROVEMENT				\$107,870.26

SPECIAL PROJECTS

<hr/>				\$0.00
<hr/>				\$0.00
<hr/>				\$0.00
<hr/>				\$0.00
SUBTOTAL SPECIAL PROJECTS				\$0.00

MOVE IN **\$3,856.52**

GRAND TOTAL **\$129,605.78**

SUMMARY OF CONSTRUCTION COST

Sale:	<u>Tin Forks</u>		Road:	<u>A to B</u>
Construction -	_____ stations _____ miles		Improvement -	<u>8 + 06</u> stations <u>0.15</u> miles
CLEARING AND GRUBBING -				
Side cast	0.00 acres	@	\$513.00 per acre =	\$0.00
Scattering	0.00 acres	@	\$790.00 per acre =	\$0.00
Piling	0.00 acres	@	\$877.00 per acre =	\$0.00
Pile-Burn	0.00 acres	@	\$1,458.00 per acre =	\$0.00
Endhaul	0.00 acres	@	\$1,500.00 per acre =	\$0.00
			TOTAL CLEARING AND GRUBBING	\$0.00
EXCAVATION -				
54 + 30	20 hrs	@	\$115.00 per hr =	\$2,300.00
54 + 30	4 hrs	@	\$130.30 per hr =	\$521.20
43 + 40	17 hrs	@	\$115.00 per hr =	\$1,955.00
43 + 40	2 hrs	@	\$130.30 per hr =	\$260.60
232 + 55-233 + 29 End-Haul (includes haul & compact)	1410 cys.	@	\$3.19 per c.y. =	\$4,497.90
	0 cys.	@	\$0.00 per c.y. =	\$0.00
			TOTAL EXCAVATION	\$9,534.70
CULVERTS - MATERIALS & INSTALLATION				
	Culverts			
	0	LF of 18"	\$0.00	
	0	LF of 30"	\$0.00	
	0	LF of 42"	\$0.00	
	0	LF of 54"	\$0.00	
			<u>\$0.00</u>	
	0	LF of 24"	\$0.00	
	0	LF of 36"	\$0.00	
	0	LF of 48"	\$0.00	
	126	LF of 171"X110	\$32,675.50	Materials Only
			<u>\$32,675.50</u>	
	Half Rounds			
	0	LF of 21"	\$0.00	
	0	LF of 36"	\$0.00	
	0	LF of 48"	\$0.00	
	0	LF of 60"	\$0.00	
			<u>\$0.00</u>	
	Culvert Stakes			
	0	Stakes	\$0.00	
	2	Markers	\$12.00	
			<u>\$12.00</u>	
			TOTAL CULVERTS	\$32,687.50
SURFACING-				
Bedding Rock 43 + 40	163	cy. of 2" Crushed	@ \$2.15 per c.y. =	\$350.45
Fill Armour 43 + 40	100	cy. of Medium Riprap	@ \$8.88 per c.y. =	\$888.00
Base Rock 43 + 40	67	cy. of Pit-Run	@ \$8.11 per c.y. =	\$543.37
Crushed Rock(14'X6") 43 + 40	78	cy. of 2" Crushed	@ \$3.40 per c.y. =	\$265.20
Bedding Rock 54 + 30	180	cy. of 2" Crushed	@ \$2.32 per c.y. =	\$417.60
Fill Armour 54 + 30	150	cy. of Medium Riprap	@ \$8.70 per c.y. =	\$1,305.00
Base Rock(16'X9") 54 + 30	67	cy. of Pit-Run	@ \$7.93 per c.y. =	\$531.31
Crushed Rock(14'X6") 54 + 30	78	cy. of 2" Crushed	@ \$3.57 per c.y. =	\$278.46
Crushed 231 + 15 to 235 + 21	158	cy. of 2" Crushed	@ \$6.34 per c.y. =	\$1,001.72
Pit-Run 232 + 15 to 234 + 21	307	cy. of Pit-Run	@ \$7.72 per c.y. =	\$2,370.04
Buttress 232 + 55 to 233 + 69	978	cy. of Medium Riprap	@ \$8.49 per c.y. =	\$8,303.22
			<u>\$8,303.22</u>	
			TOTAL SURFACING	\$16,254.37
SPECIAL PROJECTS				
<u>Compactor (2 day @ \$45/day)</u>				\$90.00
<u>Volume pump (2 days @ \$60/day)</u>				\$120.00
<u>Labor (3 for 20Hrs @ \$28/Hr)</u>				\$1,680.00
<u>Deliver existing culvert @ 43 + 40 to State office in good working condition</u>				\$125.00
<u>Install non-woven geotextile fabric 232 + 55 to 233 + 69 (500 sy @ .90/sy)</u>				\$450.00
<u>Remove culvert from STATE land (54 + 30)</u>				\$200.00
<u>Grass Seed Fertilize & Mulch (.2 Ac @ \$1180/Ac)</u>				\$236.00
			TOTAL SPECIAL PROJECTS	\$2,901.00
			GRAND TOTAL	\$61,377.57

SUMMARY OF CONSTRUCTION COST

Sale: Tin Forks

Road: C to D

Construction - stations
 miles

Improvement - 100+88 stations
1.91 miles

CLEARING AND GRUBBING -

Side cast	0.00	acres @	\$513.00 per acre =		\$0.00
Scattering	0.00	acres @	\$790.00 per acre =		\$0.00
Piling	0.00	acres @	\$877.00 per acre =		\$0.00
Pile-Burn	0.00	acres @	\$1,458.00 per acre =		\$0.00
Endhaul	0.00	acres @	\$1,500.00 per acre =		\$0.00
TOTAL CLEARING AND GRUBBING					\$0.00

EXCAVATION -

Widening @ 50+44 & EH to WA	120	cys. @	\$4.68 per c.y. =		\$561.60
	0	cys. @	\$0.00 per c.y. =		\$0.00
	0	cys. @	\$0.00 per c.y. =		\$0.00
	0	cys. @	\$0.00 per c.y. =		\$0.00
TOTAL EXCAVATION					\$561.60

CULVERTS - MATERIALS & INSTALLATION

Culverts

206	LF of 18"	\$3,193.00		0	LF of 24"	\$0.00
0	LF of 30"	\$0.00		0	LF of 36"	\$0.00
0	LF of 42"	\$0.00		0	LF of 48"	\$0.00
0	LF of 54"	\$0.00		0	LF of 60"	\$0.00
<u>\$3,193.00</u>				<u>\$0.00</u>		

Half Rounds

100	LF of 21"	\$1,187.00		0	LF of 30"	\$0.00
0	LF of 36"	\$0.00		0	LF of 42"	\$0.00
0	LF of 48"	\$0.00		0	LF of 54"	\$0.00
0	LF of 60"	\$0.00		0	LF of 66"	\$0.00
<u>\$1,187.00</u>				<u>\$0.00</u>		

Culvert Stakes

20	Stakes	\$160.00
6	Markers	\$36.00

TOTAL CULVERTS \$4,576.00

SURFACING-

Culvert Spot Rock	120	cy. of	2" Crushed @	\$7.10 per c.y. =	\$852.00
49+69 to 51+19 (4" lift)	33	cy. of	2" Crushed @	\$7.10 per c.y. =	\$234.30
TOTAL SURFACING					\$1,086.30

SPECIAL PROJECTS

<u>Construct Sediment Catch Basins (2 @ \$30 /Each)</u>	\$60.00
<u>Construct Diversion Flap (1 @ \$130 /Each)</u>	\$130.00
<u>Remove Existing Culvert @ Sta 100+88</u>	\$33.22
<u>Cut 2' off existing culvert @ 57+85</u>	\$15.11
<u>Grass Seed and Mulch (.02 Ac @ \$1180/Ac)</u>	\$23.60
	<u>\$0.00</u>

TOTAL SPECIAL PROJECTS \$261.93

GRAND TOTAL \$6,485.83

SUMMARY OF CONSTRUCTION COST

Sale: Tin Forks

Road: E to F

Construction - 12 + 65 stations
0.24 miles

Improvement - _____ stations
_____ miles

CLEARING AND GRUBBING -

Side cast	0.00 acres @	\$513.00 per acre =	\$0.00
Scattering	1.80 acres @	\$790.00 per acre =	\$1,422.00
Piling	0.00 acres @	\$877.00 per acre =	\$0.00
Pile-Burn	0.00 acres @	\$1,458.00 per acre =	\$0.00
Endhaul	0.00 acres @	\$1,500.00 per acre =	\$0.00
TOTAL CLEARING AND GRUBBING			\$1,422.00

EXCAVATION -

Drift	2231 cys. @	\$1.56 per c.y. =	\$3,480.36
End Haul	1622 cys. @	\$2.75 per c.y. =	\$4,460.50
	0 cys. @	\$0.00 per c.y. =	\$0.00
	0 cys. @	\$0.00 per c.y. =	\$0.00
TOTAL EXCAVATION			\$7,940.86

CULVERTS - MATERIALS & INSTALLATION

Culverts					
0	LF of 18"	\$0.00	0	LF of 24"	\$0.00
0	LF of 30"	\$0.00	0	LF of 36"	\$0.00
0	LF of 42"	\$0.00	0	LF of 48"	\$0.00
0	LF of 54"	\$0.00	0	LF of 60"	\$0.00
		<u>\$0.00</u>			<u>\$0.00</u>
Half Rounds					
0	LF of 21"	\$0.00	0	LF of 30"	\$0.00
0	LF of 36"	\$0.00	0	LF of 42"	\$0.00
0	LF of 48"	\$0.00	0	LF of 54"	\$0.00
0	LF of 60"	\$0.00	0	LF of 66"	\$0.00
		<u>\$0.00</u>			<u>\$0.00</u>
Culvert Stakes					
0	markers	\$0.00			
TOTAL CULVERTS					\$0.00

SURFACING-

9" Lift	700	cy. of	Pit-Run	@	\$8.82 per c.y. =	\$6,174.00
4" Lift	250	cy. of	2" Crushed	@	\$7.60 per c.y. =	\$1,900.00
1 TA	17	cy. of	Pit-Run	@	\$8.82 per c.y. =	\$149.94
TOTAL SURFACING						\$8,223.94

SPECIAL PROJECTS

<u>Grass Seed (.12 Ac @ \$180/Ac)</u>	\$21.60	
<u>Roll Subgrade (12.65 Sta @ 8.25/Sta)</u>	\$104.40	
<u>Grade and Shape Subgrade (12.65 Sta @ \$13.14/Sta)</u>	\$166.20	
TOTAL SPECIAL PROJECTS		\$292.20

GRAND TOTAL **\$17,879.00**

SUMMARY OF CONSTRUCTION COST

Sale: Tin Forks

Road: G to H

Construction - _____ stations
 _____ miles

Improvement - 70 + 55 stations
1.34 miles

CLEARING AND GRUBBING -

Side cast	0.00	acres @	\$513.00	per acre =	\$0.00	
Scattering	0.00	acres @	\$790.00	per acre =	\$0.00	
Piling	0.00	acres @	\$877.00	per acre =	\$0.00	
Pile-Burn	0.00	acres @	\$1,458.00	per acre =	\$0.00	
Endhaul	0.00	acres @	\$1,500.00	per acre =	\$0.00	
TOTAL CLEARING AND GRUBBING						\$0.00

EXCAVATION -

	0	cys. @	\$0.00	per c.y. =	\$0.00	
	0	cys. @	\$0.00	per c.y. =	\$0.00	
TOTAL EXCAVATION						\$0.00

CULVERTS - MATERIALS & INSTALLATION

Culverts

110	LF of 18"	\$1,705.00	0	LF of 24"	\$0.00
0	LF of 30"	\$0.00	0	LF of 36"	\$0.00
0	LF of 42"	\$0.00	0	LF of 48"	\$0.00
0	LF of 54"	\$0.00	0	LF of 60"	\$0.00
		<u>\$1,705.00</u>			<u>\$0.00</u>

Half Rounds

20	LF of 21"	\$237.40	0	LF of 30"	\$0.00
0	LF of 36"	\$0.00	0	LF of 42"	\$0.00
0	LF of 48"	\$0.00	0	LF of 54"	\$0.00
0	LF of 60"	\$0.00	0	LF of 66"	\$0.00
		<u>\$237.40</u>			<u>\$0.00</u>

Culvert Stakes

4	Stakes	\$32.00
3	Markers	<u>\$18.00</u>

TOTAL CULVERTS \$1,992.40

SURFACING-

Culvert Spot Rock	60	cy. of	2" Crushed	@	\$7.10	per c.y. =	\$426.00	
		cy. of		@	\$0.00	per c.y. =	<u>\$0.00</u>	
TOTAL SURFACING								\$426.00

SPECIAL PROJECTS

Construct 40' Ditch Out @ Sta 40+10							\$50.00	
TOTAL SPECIAL PROJECTS								\$50.00

GRAND TOTAL \$2,468.40

SUMMARY OF CONSTRUCTION COST

Sale: Tin Forks

Road: South Fork Cook Cr A to I

Construction - _____ stations
 _____ miles

Improvement - 4 + 00 stations
0.11 miles

CLEARING AND GRUBBING -

Side cast	0.00 acres @	\$513.00 per acre =	\$0.00
Scattering	0.64 acres @	\$790.00 per acre =	\$505.60
Piling	0.00 acres @	\$877.00 per acre =	\$0.00
Pile-Burn	0.00 acres @	\$1,458.00 per acre =	\$0.00
Endhaul	0.00 acres @	\$1,500.00 per acre =	\$0.00
TOTAL CLEARING AND GRUBBING			\$505.60

EXCAVATION -

80 hrs @	\$115.00 per hr =	\$9,200.00
26 hrs @	\$130.31 per hr =	\$3,388.06
0 cys. @	\$0.00 per c.y. =	\$0.00
0 cys. @	\$0.00 per c.y. =	\$0.00
TOTAL EXCAVATION		\$12,588.06

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18"	\$0.00	70 LF of 24"	\$821.10	Materials Only
0 LF of 30"	\$0.00	0 LF of 36"		
0 LF of 42"	\$0.00	90 LF of 48"	\$2,771.00	Materials Only
0 LF of 54"	\$0.00	92 LF of 120"	\$11,964.20	Materials Only
	\$0.00		\$15,556.30	

Half Rounds

0 LF of 21"	\$0.00	0 LF of 30"	\$0.00
0 LF of 36"	\$0.00	0 LF of 42"	\$0.00
0 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	\$0.00	0 LF of 66"	\$0.00
	\$0.00		\$0.00

Culvert Stakes

0 Stakes	0.00
3 marker	\$18.00

TOTAL CULVERTS \$15,574.30

SURFACING-

12+10	50 cy. of	Pit-Run @	\$5.45 per c.y. =	\$272.50
12+10	100 cy. of	Riprap @	\$10.00 per c.y. =	\$1,000.00
58+00	50 cy. of	Pit-Run @	\$5.00 per c.y. =	\$250.00
58+00	140 cy. of	Riprap @	\$11.76 per c.y. =	\$1,646.40
58+00	50 cy. of	Bedding @	\$5.20 per c.y. =	\$260.00
196+42	117 cy. of	Pit-Run @	\$3.50 per c.y. =	\$409.50
196+42	250 cy. of	Riprap @	\$6.50 per c.y. =	\$1,625.00
196+42	167 cy. of	Bedding @	\$10.50 per c.y. =	\$1,753.50
TOTAL SURFACING				\$7,216.90

SPECIAL PROJECTS

Labor (3 for 13 Hrs @ \$28/Hr)	\$1,092.00	
Compactor (2 days @ \$45/day)	\$90.00	
Grass Seed & Mulch .12 Acres @ 1180/Ac	\$141.60	
Remove culverts from State land	\$200.00	
Rolling Dip Construction (2 @ \$65/each)	\$130.00	
TOTAL SPECIAL PROJECTS		\$1,653.60

GRAND TOTAL \$37,538.46

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	<u>Jetty Pit</u>	Location:	<u>Cook CR</u>
Sale:	<u>Tin Forks</u>	Road:	<u>1909 c.y.</u>
Swell:	<u>1.30</u>	Stockpile:	<u>c.y.</u>
Shrinkage:	<u>1.16</u>	Total Truck Loads:	<u>1909 c.y.</u>
Drill Pct.:	<u>80%</u>	In Place Total:	<u>1468 c.y.</u>

Pit development & clean-up:					\$2,600.00
Drill & Shoot:	<u>\$2.10</u> /cu.yd.	x	<u>1174</u> cu.yds.	=	\$2,465.40
Strip Rock:	<u>\$1.50</u> /cu.yd.	x	<u>294</u> cu.yds.	=	\$441.00
Push Rock:	<u>\$0.60</u> /cu.yd.	x	<u>1909</u> cu.yds.	=	\$1,145.40
Load Dump Truck:	<u>\$1.37</u> /cu.yd.	x	<u>1909</u> cu.yds.	=	\$2,615.33
				Subtotal	\$9,267.13

Move in and set up drill and compressor		\$241.00
Move in Excavator		\$395.00
Move in D-8		\$395.00
	Subtotal	\$1,031.00

TOTAL PRODUCTION COSTS	\$10,298.13
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Base Cost \$5.39 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
A-B 43+40	\$2.12	\$1.37	\$5.39	\$8.88	100	\$888.00
A-B 54+30	\$1.94	\$1.37	\$5.39	\$8.70	150	\$1,305.00
A-B 232+55	\$1.73	\$1.37	\$5.39	\$8.49	978	\$8,303.22
A-I 12+10	\$3.24	\$1.37	\$5.39	\$10.00	100	\$1,000.00
A-I 58+00	\$5.00	\$1.37	\$5.39	\$11.76	140	\$1,646.40
A-B 43+40 P-R	\$2.12	\$0.60	\$5.39	\$8.11	67	\$543.37
A-B 54+30 P-R	\$1.94	\$0.60	\$5.39	\$7.93	67	\$531.31
A-B 232+55 P-R	\$1.73	\$0.60	\$5.39	\$7.72	307	\$2,370.04
			Total C.Y.		1909	Sub Total
						\$16,587.34

TOTAL ROCKING COSTS	\$16,587.34
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ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	<u>Tin Shack Loop</u>	Location:	<u>Sec 2, T2N, R8W</u>
Sale:	<u>Tin Forks</u>	Road:	<u>717 c.y.</u>
Swell:	<u>1.30</u>	Stockpile:	<u>c.y.</u>
Shrinkage:	<u>1.16</u>	Total Truck Loads:	<u>717 c.y.</u>
Drill Pct.:	<u>0%</u>	In Place Total:	<u>552 c.y.</u>

Scalp & Clear Overburden:				\$984.00
Dig Rock:	\$1.50 /cu.yd.	x	552 cu.yds.	= \$828.00
Load Dump Truck:	\$0.60 /cu.yd.	x	717 cu.yds.	= \$430.20
			Subtotal	\$2,242.20

Move in Excavator (within area)		\$65.60
Move in water truck (within area)		\$5.00
	Subtotal	\$70.60

TOTAL PRODUCTION COSTS	\$2,312.80
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Base Cost \$3.23 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
E-F	\$4.99	\$0.60	\$3.23	\$8.82	717	\$6,323.94
	\$0.00	\$0.00	\$0.00	\$0.00	0	\$0.00
	\$0.00	\$0.00	\$0.00	\$0.00	0	\$0.00
	\$0.00	\$0.00	\$0.00	\$0.00	0	\$0.00
	\$0.00	\$0.00	\$0.00	\$0.00	0	\$0.00
	\$0.00	\$0.00	\$0.00	\$0.00	0	\$0.00
					Total C.Y. 717	Sub Total \$6,323.94

Stockpile	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu.Yds.	ROCK COST
	\$0.00	\$0.00	\$0.00	\$0.00	0	\$0.00
					Total C.Y. 0	Sub Total \$0.00

TOTAL ROCKING COSTS	\$6,323.94
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MOVE-IN CALCULATIONS

Sale: **Tin Forks**

MILEAGE FACTORS			
Distance Factor		Distance Factor	
0-25	0.58	55	1.07
30	0.66	60	1.15
35	0.74	65	1.23
40	0.82	70	1.31
45	0.91	75	1.40
50	1.00	80	1.48

MILEAGE FACTOR = 0.74

No.	EQUIPMENT DESCRIPTION	Base Cost	Move in Cost	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
1	Drill & Compressor	\$241	\$178.34				0	\$0.00	\$178.34
1	Graders	\$241	\$178.34	\$7.05	0	15	15	\$105.75	\$284.09
0	Loader (1.5 - 2.5 cy)	\$241	\$0.00	\$6.83	0	0	0	\$0.00	\$0.00
1	Loader (3 cy +)	\$387	\$286.38	\$8.15	0	0	0	\$0.00	\$286.38
1	Rollers & Compactors	\$241	\$178.34	\$13.73	0	4	4	\$54.92	\$233.26
2	Excavators	\$533	\$788.84	\$36.60	0	13	13	\$951.60	\$1,740.44
0	Large Backhoes	\$533	\$0.00	\$21.42	0	0	0	\$0.00	\$0.00
0	Small backhoes	\$241	\$0.00	\$3.52	0	0	0	\$0.00	\$0.00
0	Tractors (D5 - D7)	\$385	\$0.00	\$18.47	0	0	0	\$0.00	\$0.00
1	Tractors (D8)	\$533	\$394.42	\$25.53	0	15	15	\$382.95	\$777.37
0	Dump Truck (< 10 cy)	\$121	\$0.00	\$2.30	0	0	0	\$0.00	\$0.00
2	Dump Truck (10 cy +)	\$144	\$213.12	\$2.76	0	26	26	\$143.52	\$356.64

TOTAL MOVE-IN COSTS: \$3,856.52

Oregon Department of Forestry

Cruise Report

Tin Forks

1. **Type of Sale:** Thinning and Clearcut/Recovery and Cash
2. **Legal Description:** Portions of Section 1, 2, and 3, Township 2 North, Range 8 West, W.M. Tillamook County, Oregon.
3. **Sale Acreage:** The sale boundaries were plotted on a digital orthophotograph and the acreage was calculated with GIS.

	<u>Total Acres</u>	<u>Net Acres</u>
Area I (Clear Cut)	90	85
Area II (Partial Cut)	115	100

Deductions from total acreage have been made for existing roads and stream buffers. Area II had additional acre reductions for areas not requiring partial cutting.

4. **Cruising Procedures:**

A. **Cruising Method:**

Area I: 36 variable radius full point plots were established. Diameters and species were recorded on all plots. Merchantable height and form factors were recorded for all red alder and two conifer on each plot. The coefficient of variation is 58% and the standard error is 9.6%

Areas II: 31 variable radius full point plots were established. Diameters and species were recorded on all plots. Merchantable height and form factors were recorded for all red alder and two conifer on each plot. Residual and surplus trees were designated to calculate a residual basal area of 140 square feet per acre. The coefficient of variation is 50% and the standard error is 8.9%

Plot Size: A basal area factor of 20 was used. Point of observation was at 4.5 feet.

C. **Grading System:** All hardwoods were assigned camprun grades. The segment grading system was used for all conifer trees following the Columbia River Official Log Scaling and Grading Bureau rules.

D. **Defect and Breakage:** A 5% defect and breakage reduction were applied to the volume.

E. **Cruiser Names/Dates:** Colleen Holmen, Dave Wells, and Chris Woodward, May 2000.

5. **Computation Procedures:** Basal area and density was calculated from plot data taken. V-BAR (Volume-Basal Area Ratio) for the measured trees was computed using SuperAce 98 from Atterbury Consultant Inc.
6. **Timber Description:** The sale contains two areas which are primarily the result of natural seeding after the 1945 fire with some portions of planted Douglas-fir. Area I is 60% red alder and 40% Douglas-fir by basal area. Area II is 40% red alder and 60% Douglas-fir by basal area. Both areas range in age from 45-55 years old and have a minor component of hemlock and spruce. Swiss needle cast infection is rated moderate to severe on Area I and low on Area II.
7. **Revenue Distribution:**
100% FDF
Tax Code: 100% 56-1
Deed Number: 35
6% Rehabilitation Obligated
8. **Attachments:**
Volume Summary
Stand Tables
Logging Plan
Cruise Map



"STEWARDSHIP IN FORESTRY"

Tin Forks

Volume Summary

Area I						
85 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	28	149	4.2	355	5%	337
Alder	92	102	9.4	798	5%	759
TOTAL				1153		1095

Area II						
100 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	28	156	4.4	437	5%	415
Alder	66	110	7.3	726	5%	690
TOTAL				1163		1105

TOTAL SALE VOLUME			
SPECIES	MBF		Net Vol. (MBF)
Douglas-fir	791		752
Alder	1524		1448
TOTAL	2316		2200

Tin Forks - Area 1

DBH	Total TK t/acre	Total LV t/acre	Doug-fir TK t/acre	Doug-fir LV t/acre	Hemlock TK t/acre	Hemlock LV t/acre	Spruce/Cdr TK t/acre	Spruce/Cdr LV t/acre	Red Alder TK t/acre	Red Alder LV t/acre
8"	23.9	0.0	6.4	0.0	0.0	0.0	0.0	0.0	17.5	0.0
9"	11.3	1.3	3.8	0.0	0.0	1.3	0.0	0.0	7.5	0.0
10"	21.4	0.0	4.1	0.0	0.0	0.0	0.0	0.0	17.3	0.0
11"	19.4	0.0	3.4	0.0	0.0	0.0	0.0	0.0	16.0	0.0
12"	24.7	0.7	1.4	0.0	0.0	0.7	0.0	0.0	23.3	0.0
13"	15.7	0.0	1.2	0.0	0.0	0.0	0.0	0.0	14.5	0.0
14"	16.1	0.0	3.6	0.0	0.0	0.0	0.0	0.0	12.5	0.0
15"	3.7	0.0	1.4	0.0	0.0	0.0	0.0	0.0	2.3	0.0
16"	6.4	0.4	2.4	0.0	0.0	0.4	0.0	0.0	4.0	0.0
17"	3.2	0.0	1.8	0.0	0.0	0.0	0.0	0.0	1.4	0.0
18"	1.5	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.6	0.0
19"	3.4	0.0	1.4	0.0	0.0	0.0	0.0	0.0	2.0	0.0
20"	1.3	0.8	0.5	0.8	0.0	0.0	0.0	0.0	0.8	0.0
21"	0.2	1.2	0.0	1.2	0.0	0.0	0.0	0.0	0.2	0.0
22"	0.0	2.7	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0
24"	0.0	1.6	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
26"	0.0	0.9	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
28"	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
30"	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
34"	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38"	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
40"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Spruce/Cdr	Red Alder
Current	162	40	2	0	120
Residual	10	8	2	0	0
Take	152	32	0	0	120

Basal Area/acre

	All Spec	Doug-fir	Hemlock	Spruce/Cdr	Red Alder
Current	146	52	2	2	92
Residual	28	24	2	2	0
Take	120	28	0	0	92

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Spruce/Cdr	Red Alder
Current	12.9	15.4	13.5	0.0	11.9
Residual	22.7	23.5	13.5	0.0	0.0
Take	12.0	12.7	0.0	0.0	11.9

Stand Density Index (%)

	Doug-fir	Hemlock	Spruce/Cdr
Current	41	30	35
Residual	6	5	5

TIN FORKS-- Area II

DBH	Total TK tr/acre	Total LV tr/acre	Doug-fir TK tr/acre	Doug-fir LV tr/acre	Hemlock TK tr/acre	Hemlock LV tr/acre	Spruce/Cdr TK tr/acre	Spruce/Cdr LV tr/acre	Red Alder TK tr/acre	Red Alder LV tr/acre
8"	3.7	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9"	7.3	0.0	2.9	0.0	0.0	0.0	0.0	0.0	4.4	0.0
10"	21.3	4.8	2.4	1.2	0.0	2.4	0.0	1.2	18.9	0.0
11"	14.7	2.9	4.9	2.9	0.0	0.0	0.0	0.0	9.8	0.0
12"	14.8	0.8	4.1	0.8	0.0	0.0	0.0	0.0	10.7	0.0
13"	21.7	1.4	5.6	1.4	0.0	0.0	0.0	0.0	16.1	0.0
14"	16.3	3.6	3.6	3.0	0.0	0.6	0.0	0.0	12.7	0.0
15"	5.3	3.2	3.7	3.2	0.0	0.0	0.0	0.0	1.6	0.0
16"	4.6	4.6	1.8	4.6	0.0	0.0	0.0	0.0	2.8	0.0
17"	2.0	5.7	0.4	4.9	0.0	0.8	0.0	0.0	1.6	0.0
18"	0.7	5.1	0.0	4.7	0.0	0.4	0.0	0.0	0.7	0.0
19"	1.0	3.9	0.3	3.9	0.0	0.0	0.0	0.0	0.7	0.0
20"	0.0	3.8	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0
21"	0.0	1.9	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
22"	0.0	2.4	0.0	2.2	0.0	0.2	0.0	0.0	0.0	0.0
24"	0.0	2.1	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0
26"	0.0	0.9	0.0	0.7	0.0	0.2	0.0	0.0	0.0	0.0
28"	0.0	0.4	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0
30"	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Spruce/Cdr	Red Alder
Current	161	75	5	1	80
Residual	48	42	5	1	0
Take	113	33	0	0	80

Basal Area/acre

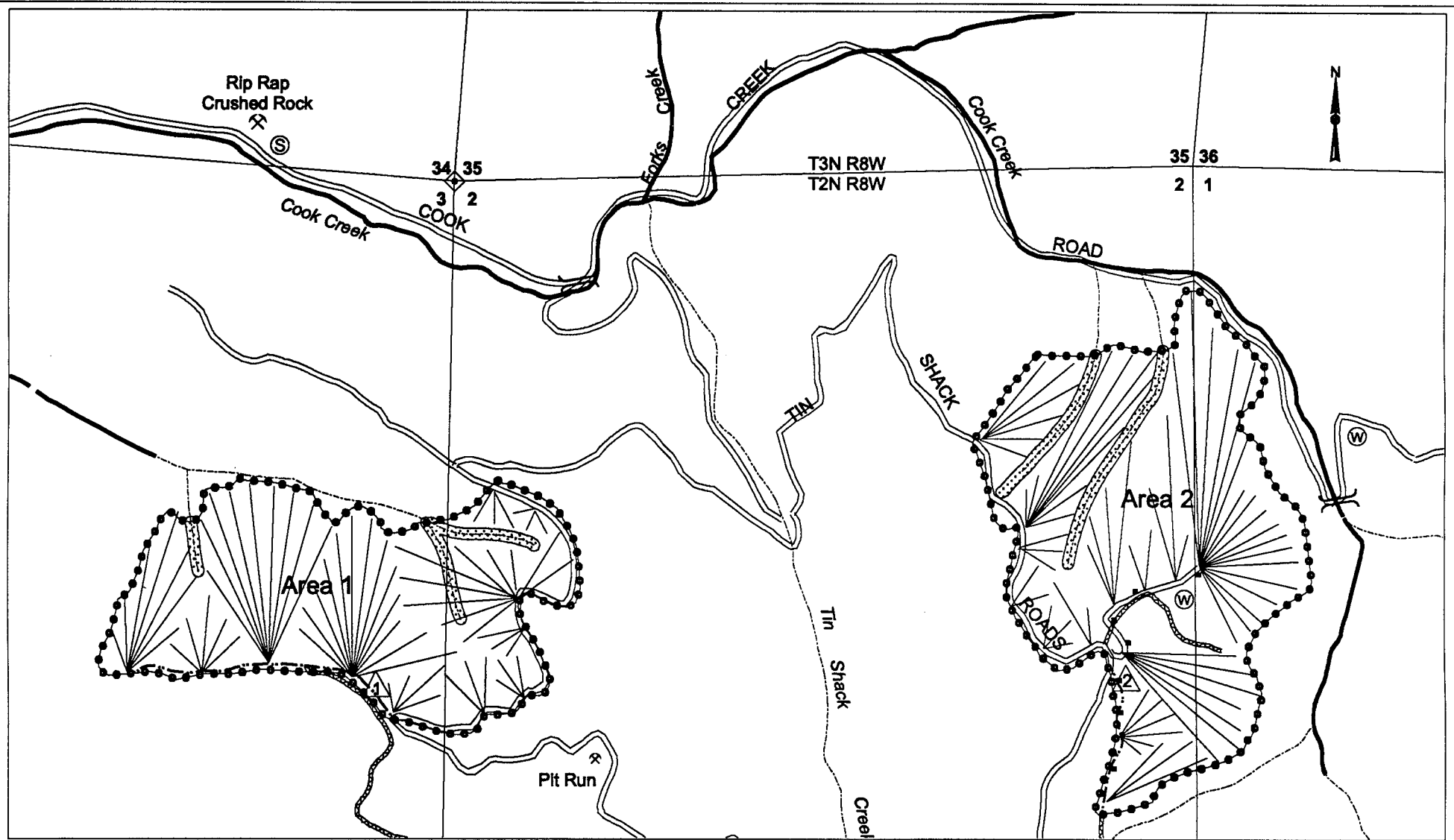
	All Spec	Doug-fir	Hemlock	Spruce/Cdr	Red Alder
Current	170	98	6	0	66
Residual	76	70	6	0	0
Take	94	28	0	0	66

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Spruce/Cdr	Red Alder
Current	13.9	15.5	14.8	0.0	12.3
Residual	17.0	17.5	14.8	0.0	0.0
Take	12.4	12.5	0.0	0.0	12.3

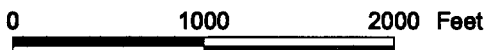
Stand Density Index (%)

	Doug-fir	Hemlock	Spruce/Cdr
Current	45	34	39
Residual	19	14	16



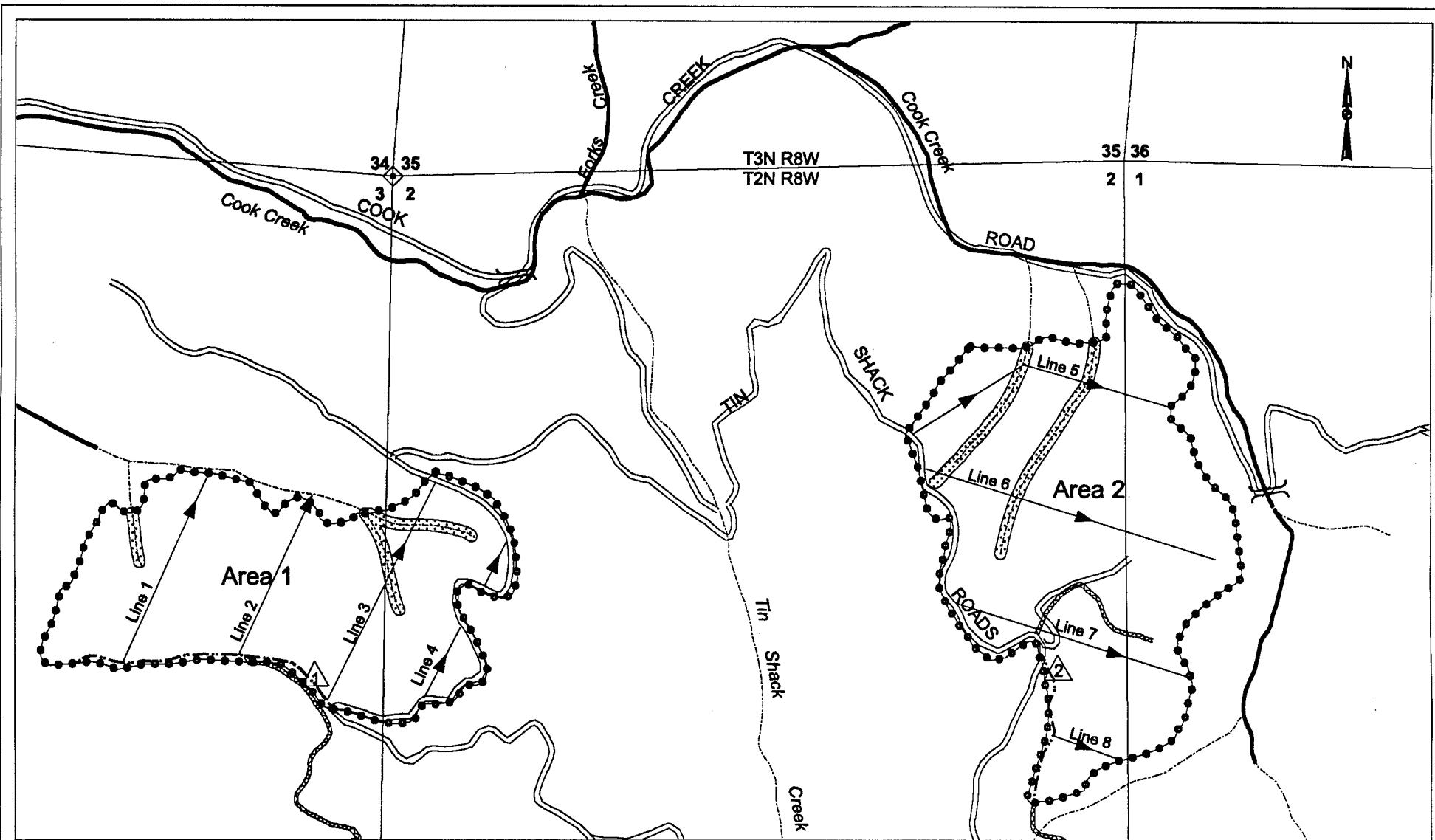
- Timbersale boundary
- - - - - Area boundary
- ⊙ Waste area
- ⊙ Stockpile
- ⊗ Rock pit
- Known Land Survey Corner
- Type F Stream
- - - - - Type N Stream
- ▨ Stream Buffer
- Surfacd existing road
- - - - - Unsurfacd existing road
- County Roads
- - - - - New construction Road
- - - - - Abandoned Road
- △ Non Project Road
- Corridors
- Tractor Landings
- () Non Required Thinning
- Bridge

Tin Forks
Logging Plan
 Portions of Sections 1, 2, and 3, T2N, R8W,
 W.M. Tillamook County, Oregon



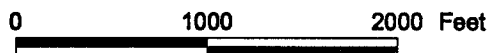
Approximate Acreage:

	Gross	Regen Net Acres	Partial Cut Net Acres
Area 1	90	85	0
Area 2	115	0	100
Total	205	85	100



- Timbersale boundary
- Area boundary
- Known Land Survey Corner
- Type F Stream
- - - Type N Stream
- ▨ Stream Buffer
- ▨▨▨ Surfacd existing road
- - - Unsurfaced existing road
- ▬▬▬ County Roads
- - - New construction Road
- ▨▨▨ Abandoned Road
- ▨▨▨ Non Project Road
- ▨▨▨ Non- required thinning
- ▨▨▨ Corridors
- ▨▨▨ Bridge

Tin Forks
 Cruise Line Map
 Portions of Sections 1, 2, and 3, T2N, R8W,
 W.M. Tillamook County, Oregon



Approximate Acreage:

	Gross	Regen Net Acres	Partial Cut Net Acres
Area 1	90	85	0
Area 2	115	0	100
Total	205	85	100

OREGON DEPARTMENT OF FORESTRY
WRITTEN PLAN

SALE NAME: Tin Forks

PROTECTED RESOURCES: Type F streams: Strahm Creek (large), 2 unnamed tributaries of Cook Creek (small and medium), Tin Shack Creek (medium), and Cook Creek (large).

LOCATION: Portions of Section 1, 2, 3, and 4, T2N, R8W, W.M., Tillamook County, Oregon.

ACTIVITIES: Logging cables strung across Type F streams for deflection and road improvement (culvert installation, road widening and rocking).

DEFINITIONS: Riparian Management Area (RMA): The area within 100 feet horizontal distance from the high water mark on each side of the protected large Type F stream. High Risk Sites: Active landslides and slumps; slopes steeper than 80%; and headwalls or draws steeper than 70%.

PROTECTION MEASURES:

YARDING and FELLING:

- All trees in the RMA outside of yarding corridors are reserved from cutting.
- Adjacent trees will be felled away from or parallel to the RMA.
- If trees or logs fall or slide into a stream channel they will not be limbed, bucked, or removed without approval from ODF.
- When cable yarding lines are strung across RMA's they will be at least 150 feet apart and pulled out prior to rigging the next yarding road.
- Cable yarding will be used on high risk sites.
- A self-clamping carriage capable of passing over intermediate supports and being positioned and repositioned for each turn of logs, without lowering the skyline, will be used to control the direction of yarding.
- Intermediate supports will be used to provide lift.
- Logs will have at least one end suspended when yarded.
- Soil gouging will be incidental and limited to a depth of 1 foot (measured vertically).
- Type N streams shown on the timber sale Exhibit "A" will have 25 to 40 foot no harvest buffer to protect water quality.
- Except as needed for project work, ground yarding equipment will not operate within 50 feet of Type F streams.
- Ground yarding will not be allowed on high risk sites.
- Active landslides and slumps discovered within the harvest areas will be reviewed by the State to determine protective measures for these areas. Further consultation with the Area geotechnical specialist and/or removal of the sites from the harvest area may be required.

PROJECT WORK:

- In stream project work activity within 100 feet of the protected streams will be limited to the period between July 1 and September 15.
- Water will be diverted around the work area to avoid producing stream sediment.
- Sediment traps will be used as needed to protect water quality.
- Fill material will be placed and compacted in 8 inch lifts. Fill slopes will be constructed at a 1½ :1 fill width to height ratio.
- Rip rap placement will be accomplished by placing rock by machine rather than end dumping.
- Waste material will be end-hauled to stable locations marked in the field.

- All disturbed areas will be grass seeded, fertilized and mulched to reduce erosion.
- Roads will not be constructed on high risk sites.

PIPE GEOMETRY:

Strahm Creek

- The existing stream gradient is 3.9%. The full bank stream width is 16 feet.
- Bed material consists of abundant large cobbles.
- A 171" x 110" x 66' aluminized steel culvert will be installed at 3.9%.
- The outlet invert and the inlet invert of the culvert will be placed 1.8 feet below the existing stream gradient. This will result in a cross sectional area of 82 square feet. .
- The required 50 year peak flow (by ODF method) for this drainage is 283cubic feet per second with a minimum cross sectional area of 44 square feet.

Unnamed tributary of Cook Creek

- The existing stream gradient is 8.8%. The full bank stream width is 13.4 feet.
- Bed materials consists of abundant large cobbles.
- A 171" x 110" x 60' aluminized steel culvert will be installed at 6.5%.
- The outlet invert of the culvert will be placed 1.8 feet below the existing stream gradient and the inlet invert will be placed 3.2 feet below the existing stream gradient. This will result in a cross sectional area at the inlet of 65 square feet.
- The required 50 year peak flow (by ODF method) for this drainage is 28 cubic feet per second with a minimum cross sectional area of 7 square feet.

Both sites will be monitored to insure that embedding is achieved. Additional information is available in Exhibit "B" of the contract.

PREPARED BY: Colleen Holmen
 Stuart Mitchell
 Date: May 23, 2001

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